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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,302	08/19/2003	George J. Miao		4223

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EXAMINER

ETTEHADIEH, ASLAN

ART UNIT	PAPER NUMBER
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2611

DATE MAILED: 12/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/643,302

Applicant(s)

MIAO, GEORGE J.

Examiner

Aslan Ettehadieh

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Objections***

2. Claims 1 - 28 objected to because of the following informalities: please change DSSS to direct sequence spread spectrum (DSSS), OFDM to orthogonal frequency division multiplexing (OFDM), IFFT to inverse fast fourier transform (IFFT), UWB to ultra wideband (UWB), etc. (etc. being FFT, FEQ, ...) . Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1 – 28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

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4. In claims 1 – 15, the limitation of “a polyphase-based multiband”, as recited can not enable one skilled in the art to which it pertains, or with which it is most nearly connected to make and/or use the invention since neither in the claims or the specification defines what the “a polyphase-based multiband” is.

5. In claim 16 – 28, the limitation of “a polyphase-based demultiband”, as recited can not enable one skilled in the art to which it pertains, or with which it is most nearly connected to make and/or use the invention since neither in the claims or the specification defines what the “a polyphase-based demultiband” is.

6. Claims 1 – 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. In claims 1 – 15, the term “polyphase-based multiband”, as recited is indefinite since it has not been defined in the claim to distinguish it from the general term “multiband”.

8. In claim 16 – 28, the term “polyphase-based demultiband”, as recited is indefinite since it has not been defined in the claim to distinguish it from the general term “demultiband”.

9. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. “a multiband-based modulation and multicarrier” is vague and indefinite, multicarrier what?, does applicant mean multicarrier unit, multicarrier modulation, etc.

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10. Claims 1 – 28 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

11. Some of the omitted structural cooperative relationships for claims 1 – 15 are: a multiuser encoding and spreading unit, a polyphase-based multiband, a IFFT unit, a filtering unit, a multiband-based modulation and multicarrier (claim 1); a N-convolutional encoder, a N-interleaver, a N-spread multiplier, a N-user key sequence (claim 2); etc.

12. Some of the omitted structural cooperative relationships for claims 16 – 28 are: a combination section, a A/D unit, a digital receiver filter unit, a FFT and FEQ section, a polyphase-based demultiband, a dispreading, deinterleaving and decoding section (claim 16); equalizers, decision detectors, subtractors, (claim 21); etc.

13. The claim replete too many of these omitted structural cooperative relationships and therefor the applicant's attention for carefully reviewing pending claims for such other indefiniteness.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

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F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claim 1 is provisionally rejected on the ground of nonstatutory double patenting over claim 1 of copending Application No. 10/653651. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

A multiuser DSSS-OFDM multiband of UWB base station communication transmitter comprising: a multiuser encoding and spreading unit, a polyphase-based multiband, a IFFT unit, a filtering unit, a multiband-based modulation and multicarrier (claim 1).

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

15. Claim 16 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 11 of copending Application No.

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10/653651. Although the conflicting claims are not identical, they are not patentably distinct from each other because at the time the invention was made it was known that receiving systems can include multicarrier down converting and demodulation and it would have been obvious to one skilled in the art at the time the invention was made to have multicarrier down converting and demodulation to provide accurate processing of the transmitter signal by the receiver.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 102***

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

16. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Lakkis (US 7031371).

17. Regarding claim 1, Lakkis discloses a multiuser DSSS-OFDM multiband of UWB base station communication transmitter comprising: a multiuser encoding and spreading unit figure 3 elements 58, 74), a polyphase-based multiband (col. 11 lines 4 – 12; where OFDM is being interpreted as multiband), a IFFT unit (figures 3, 12), a filtering unit (col. 5 line 62 – col. 16 lines 16), a multiband-based modulation and multicarrier (figure 3 element 44, abstract, col. 1 lines 34 – 49).

18. Claim 16 is rejected under 35 U.S.C. 102(e) as being anticipated by Shattil (US 2004/0086027).

19. Regarding claim 16, Shattil discloses a multiuser DSSS-OFDM multiband of UWB mobile communication receiver comprising: a combination section of a multiband multicarrier down converter and demodulation, and A/D unit, and a digital receiver filter unit (figure 1 elements 122, 124, 125, 129, paragraphs 2, 4, 5, 90, 102, 161, 178; where element 129 having the function of interference cancellation provides the same function as filtering and therefore element 129 is being interpreted as a filter); a FFT and FEQ section (figure 1 elements 127 – 128); a polyphase-based demultiband (paragraphs 2, 4, 5, 102, 161, 178); a despreading, deinterleaving and decoding section (figure 1 elements 131 – 132, paragraph 45).

#### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aslan Ettehadieh whose telephone number is (571) 272-8729. The examiner can normally be reached on Monday - Friday, 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Aslan Ettehadieh  
Examiner  
Art Unit 2637

AE

  
**KHAI TRAN**  
**PRIMARY EXAMINER**